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NATIONAL ENERGY BOARD REASONS FOR DECISION

In the Matter of an Application Under
the National Energy Board Act
of

Maine and New Brunswick Electrical
Power Company, Limited

For Exports to the
Maine Public Service Company

EH-1-88

May 1988



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Recital and Appearances

EH-1-88

IN THE MATTER OF the National Energy Board Act and the Regulations thereunder; and

IN THE MATTER OF an application by the Maine and New Brunswick Electrical Power Company, Limited for an Export Licence under Part VI of the said Act. Filed with the National Energy Board under File number 1923-M1-3.

HEARD in St. John, New Brunswick on 29 March 1988.

BEFORE:

R.B. Horner, Q.C.
J.G. Fredette
J.R. Jenkins

Presiding Member
Member
Member

APPEARANCES:

A.D. Case, Q.C.
D.J. Higgins

Maine and New Brunswick
Electrical Power Company,
Limited

G. Richmond

Perth-Andover Electric Light
Commission

D. Tremblay-Lamer

Board Counsel

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Abbreviations

Units of Measurement

km	kilometer (1000 meters)
kV	kilovolt (1000 volts)
kW.h	kilowatt hour (1000 watt hours)
GW.h	gigawatt hour (1 000 000 kW.h)
MW	megawatt (1000 kilowatts)
MW.h	megawatt hour (1000 kW.h)
\$	Canadian current dollar (unless otherwise specified)

Names

Act	National Energy Board Act
Applicant	Maine and New Brunswick Electrical Power Company, Limited
Board	National Energy Board
MPS	Maine Public Service Company
NB Power	New Brunswick Power
N.B.	Province of New Brunswick



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Chapter 1

Background

The Maine and New Brunswick Electrical Power Company, Limited (the Applicant) was incorporated under the laws of the Province of New Brunswick (N.B.) by a Special Act of the Legislative Assembly in 1903. The Maine Public Service Company (MPS) purchased the Applicant's outstanding common stock in 1942 and continues to be the sole stockholder.

At one time the Applicant was the main provider of electric power for the New Brunswick counties of Madawaska, Victoria and Carleton. New Brunswick Power (NB Power) expropriated most of the Applicant's transmission and all its distribution facilities in 1963 with the exception of service to Perth-Andover, the Applicant being the sole provider of power to that community. The Applicant also supplies power to the community of Carlingford, N.B. for the account of NB Power, as a matter of convenience.

The Applicant owns one generating station known as the Tinker Plant which consists of 5 hydro units with an aggregate capacity of 33.5 MW and an adjacent diesel unit of 1 MW capacity. The Tinker Plant is located at Aroostook Falls, which is approximately two and one-half kilometers from the international border.

The Applicant and MPS have cooperated continuously in the generation of electric power since 1931. To

regulate and maintain capacity at the Tinker Plant, the Applicant is essentially dependent on the MPS water storage facilities known as Squa Pan and Millinocket reservoirs, located in the State of Maine. In return, the Applicant supplies approximately 20% of the entire MPS load and capacity. The two utilities operate as an integrated electrical generation and transmission system. A map illustrating the major facilities of the integrated system as of 1986 is attached as Appendix I.

The Applicant has two 69 kV interconnections with MPS with the international border crossings located approximately 0.8 km from the Four Falls Customs Station and 1.2 km south of where the Aroostook River crosses the border. Each power line has a transfer capacity of 87 megavolt-amperes. The Applicant operates a 138/69 kV substation at the Tinker plant to which it is connected at 69 kV. Its interconnections with MPS originate from this substation which is also connected to the NB Power system at 138 kV.

The Applicant presently holds two export licences, EL-22 for the export of firm power and energy and EL-23 which allows the export of interruptible energy. Both licences were issued in 1963 and expire on 30 June 1988.

Chapter 2

Application

By an application dated 17 September 1987, the Applicant applied to the National Energy Board (the Board) pursuant to Part VI of the National Energy Board Act (the Act) for a firm export licence to sell to MPS a maximum of 37 MW of firm power with a maximum of 200 GW.h of energy in any consecutive

twelve-month period commencing on 1 July 1988 and ending on 30 June 2008. Sales would be in accordance with the terms of the Intercompany Agreement (hydraulic contract) dated 1 July 1963, as amended, and the terms of the Intercompany Agreement (diesel contract) dated 30 September 1948, as amended.

Chapter 3

Contracts

There are two separate contracts in place between the Applicant and MPS covering the terms and conditions of the proposed power exchanges between the companies. These cover sales from diesel and hydraulic generation.

The diesel contract dated 30 September 1948, as amended, has been extended until the diesel generating unit is retired from service. Evidence filed shows this will occur during the year 1999. The capacity and energy charges applicable to the 1 MW capability of the diesel plant, which received Board approval in October 1983, are:

capacity charge	- \$1,667/month
energy charge	- 1 1/8¢/kW.h (increased/decreased by 9/10 mill/kW.h for each 1¢ that the price of a U.S. gallon of diesel oil varies from 7¢/U.S. gallon)

The hydraulic contract dated 1 July 1963, as amended, is scheduled to terminate on 30 June 2008. The capacity and energy charges applicable to hydraulic generation exported from Tinker are:

capacity charge	- \$1,000,000 fixed annual charge
energy charge	- \$16.4/MW.h (\$16.4/MW.h = \$0.0164/kW.h)

Under the hydraulic contract the Applicant sells to MPS all Tinker output with exception of its own requirements which includes supply to Perth-Andover.

The hydraulic contract also provides that when the Applicant's firm load requirements cannot be supplied from Tinker because of low water conditions, MPS will supply firm capacity and energy sufficient to meet the sales made by the Applicant under Level II of its Wholesale Rate 0-1. The price for such capacity and energy shall be 90% of that charge calculated at the Wholesale Rate of NB Power in effect during the month of purchase.

Additionally if Tinker generation and Level II purchases are insufficient to supply the Applicant's requirements then MPS will use its best efforts to acquire from other sources any shortfall. Such shortfall will be priced at a rate equal to the MPS cost of acquisition.

Chapter 4

The Evidence

4.1 The Canadian Load

The Applicant's sole Canadian customer is the Perth-Andover Electric Light Commission which supplies the village of Perth-Andover in New Brunswick. The Perth-Andover Electric Light Commission has 761 residential and 73 commercial customers. In 1986 the Applicant's firm peak demand, including its own use and losses, was 6.8 MW with a corresponding firm energy load of 23 724 MW.h. The Perth-Andover load is forecast to grow at an average annual rate of 2% for both power and energy.

The Applicant has undertaken to supply all of the requirements of Perth-Andover over the requested licence period, indicating that this will involve some reduction in the amount of power and energy available for export.

The Applicant has established a two-level rate structure for Perth-Andover. The lower level, Level I, has established limits of power and energy, based on the dependable output of the Tinker plant at 100% capacity factor (approximately 6 MW), which are priced on a cost-of-service basis. Level II, which includes all power and energy above these limits, is priced at 90% of the current NB Power wholesale rate. The Applicant has arranged for a firm import from MPS to supply that portion of the Perth-Andover load above the dependable capacity from Tinker. Consequently, Level II sales to Perth-Andover are treated contractually as imports from MPS although the power and energy may, in fact, be supplied from Tinker much of the time. The price for Level II imports, which reflect future growth in Perth-Andover demand, assumes supply from the consolidated system.

4.2 Generation Capacity and Surplus Power and Energy

The evidence showed that the Applicant has no firm plans to add any new generating capacity at its Tinker plant although the possibility of improving the efficiency of some of the existing generation was mentioned.

The operation of the Tinker plant is fully integrated with the MPS system and it is dispatched against the combined load of the two companies. The energy capability of the plant is determined by the availability of water in the river.

The Applicant's estimate of its dependable power supply, demand and firm export for the month of December for each year of the licence period is shown in Appendix II, December being the month of the highest demand for Perth-Andover, the major component of the Applicant's load. The table shows a surplus because the firm import is sized to cover possible variations in Tinker hydraulic output. The Applicant's estimate of annual energy supply, load and firm export is shown in Appendix III.

The evidence states that firm exports will be 27.4 MW for the term of the requested licence. The Applicant requested a licence allowing exports of up to 37 MW to cover increased generation that may be available under favourable water conditions.

4.3 United States Market

The proposed export would be made to MPS, an investor-owned utility engaged in generation, transmission, distribution and sale of electric energy. The MPS service area, approximately 193 km long and 48 km wide, is located in the northern Maine counties of Aroostook and Penobscot adjacent to the international boundary. MPS serves approximately 100,000 people (33,117 customers) including 60 communities at the retail level, 8 communities at the wholesale level and partial service to a military installation. The service area is basically rural in nature but includes food processing, lumber and wood-working industries.

In 1986 MPS had a peak load of about 114 MW. Customers consumed approximately 626 GW.h of energy. Supply came from hydraulic generation (1.5%), thermal supply (38%), cogeneration (12%), purchased nuclear (30.5%) and the Applicant (18%).

The MPS service area is isolated from other electric power companies in New England, but does have indirect interconnections with them through NB Power. There is potential for small power production facilities in the MPS area, but there are no current plans for development. While there are no definite plans to interconnect MPS with utilities in southern Maine, the Maine Public Utilities Commission has proposed a merger of MPS with the Central Maine Power Company. Until such time as MPS is interconnected with other Maine utilities, MPS will continue to rely on NB Power to transfer power and energy from generation of which MPS is part owner.

4.4 Offers to Canadian Utilities

The Applicant did not make specific offers of the proposed export to other Canadian utilities. However, it did provide the Board with a copy of a letter dated 27 August 1987 from NB Power, the only directly interconnected Canadian utility, which stated that NB Power considers the Tinker plant to be an integral part of the MPS system, essential to its existing and continued viability, and does not object to the export of all of the Tinker output except for that portion used to supply local loads.

4.5 Prices and Costs

4.5.1 The Export Price

The export price to be charged by the Applicant for export of hydraulic generation consists of the following:

- a) capacity charge - an annual charge of \$1,000,000
- b) energy charge - \$16.4 per megawatt hour

The Applicant testified that the total price, the sum of the demand and energy charges, was set to provide a return on equity of 11.5 per cent based on the actual cost of service in 1986. The annual charge of \$1,000,000 represents the value of the capacity. The energy charge was calculated so as to provide the remaining revenue requirements.

The revenues from exports of diesel generation were not considered in estimating the Applicant's total revenue requirements.

The Applicant also testified that, although there is no provision in the contracts for price adjustments, the export price would be adjusted in the future as required to cover increases in costs.

4.5.2 Applicable Costs in Canada

The Applicant showed that the proposed exports would be generated and transmitted using existing facilities. Consequently, there would be no new capital charges associated with the export. The Applicant also showed that fixed charges associated with existing facilities, as well as operating and maintenance expenses, would be recovered from operating revenues which would also provide the company with an 11.5% return on equity which assures that, at present, the export price will recover all applicable costs in Canada. The Applicant undertook to raise the export price in the future as required to maintain this relationship. The only expected increase in these costs is that due to inflation.

When asked to clarify what portion of the total costs were applicable to the proposed export, the Applicant testified that the costs given in the application could be allocated between Perth-Andover and the export in proportion to the power and energy taken by each party.

4.5.3 Price of Equivalent Service to Canadians

The Applicant testified that the type of service MPS receives from the Applicant is unique in that, while firm capacity is provided, the energy quantity varies from month to month, and annually, based on "run-of-river" conditions. Additionally, the Board notes that the contract requires MPS to provide power and energy to supply part of the Applicant's load in Canada whenever the Applicant is unable to do so. The Applicant was not aware of any equivalent transaction in the market today. Consequently it was the Applicant's view that the Board's second price guideline is not applicable.

4.5.4 Alternative Cost in the United States

The Applicant testified that in a year with average hydraulic conditions the export price would be less than that which other utilities would obtain for firm sales to the same market. However, the Applicant also stated that it was not sure that the type of energy exported to MPS could be sold at a higher price because of its variable nature.

The Applicant stated that current energy prices available to MPS from other sources are similar to the energy price for the proposed export.

4.6 Duration

The Applicant requested a 20-year licence period because the purchaser, MPS, needs the capacity and energy from the Applicant's Tinker facility in both the short and long term. In addition, the requested licence term would secure the pricing and availability of power for Perth-Andover for the 20-year period.

The Applicant also stated that for it to receive maximum benefit from the Tinker facility, the proper operation and maintenance of the upstream facilities located in the United States is essential.

4.7 Environmental Impact

The Applicant will generate the power and energy for export using an existing hydraulic generating station (Tinker Plant) as well as a 1 MW diesel generator located at the Tinker Plant site.

The export would be transmitted over existing circuits including international power lines that are already in use. Thus there being no changes to facilities or operations, the export would produce no environmental effects over and above those resulting from existing operations.

Chapter 5

Interventions

The only intervenor at the hearing was the Perth-Andover Electric Light Commission which stated that it supports the Application of the Maine and New Brunswick Electrical Power Company, Limited.

Chapter 6

Disposition

The Board has given consideration to all the evidence and submissions presented and has reached the following conclusions.

APPLICATION FOR EXPORT

Section 83 of the Act requires the Board, in examining an application for an export licence, to have regard to all considerations that appear to be relevant. Without limiting the generality of the foregoing, the Board is required to satisfy itself that the power to be exported is surplus to reasonably foreseeable Canadian requirements and that the price to be charged is just and reasonable in relation to the public interest.

6.1 Surplus

In determining whether a proposed export is surplus to Canadian requirements the Board relies on the offer mechanism. While there were no specific offers of the proposed export to Canadian utilities, the Board considers the fact that NB Power, the only directly interconnected Canadian utility, does not object to the export of all the Tinker output with the exception of that used to supply Perth-Andover, which the Applicant has committed itself to supply, is evidence that the proposed export is surplus to Canadian requirements. Accordingly, the Board is satisfied the proposed export is surplus to Canadian requirements.

The Board also recognizes the need for a firm import from MPS to complement the dependable output of the Tinker plant to make up the firm supply to Perth-Andover at those times when the output of Tinker is not sufficient to supply Perth-Andover. The Board is satisfied that the Applicant will supply its Canadian load before making any exports.

The Board also accepts that under favourable water conditions exports of up to 37 MW would be possible and therefore finds the requested licence limit reasonable.

6.2 Export Price

In assessing the suitability of an export price, the Board has developed three guidelines; the export price should recover the applicable costs incurred in Canada, it should not be less than the price for equivalent service to Canadian customers, and it should not be materially less than the least cost alternative in the proposed market area.

The Board notes that the Applicant's operations are fully integrated with the United States operations of its export customer and parent company, MPS, and being cognizant of this situation, has given it due consideration in the application of its three price guidelines.

6.2.1 *Applicable Costs in Canada*

The evidence shows that revenues from diesel exports have not been considered in estimating the Applicant's total revenue requirements. The Board therefore assumes that virtually all revenue from the proposed exports will be from hydraulic generation. However, should the Applicant export from diesel generation, the Board is satisfied that the price, which includes both capacity and energy charges, will recover applicable costs.

The Applicant's evidence shows that the proposed export would be transmitted and generated using existing facilities. Therefore there would be no additional capital expenditures. The Board has examined the evidence and is satisfied that fixed charges associated with existing facilities, as well as operating and maintenance expenses, would be recovered from revenues from hydro exports and, in addition, these revenues would provide an 11.5% return on equity.

While the contracts between the Applicant and MPS do not include provision for price adjustments, which could result in a situation where costs in Canada exceed revenues earned, the Board accepts the Applicant's undertaking that revenues would be increased when the Applicant's cost of services increased and

that a rate increase would be considered for both domestic and export markets. Any licence the Board grants will take this matter into account.

Based on the absence of expressed interest in the export quantities by potential domestic purchasers, and in light of the above considerations, the Board is satisfied that in this particular instance the export price would recover an appropriate share of the costs incurred in Canada.

6.2.2 Price for Equivalent Service to Canadians

The Applicant testified it considers the service provided to MPS is unique in that the capacity is firm but that energy quantities vary from month to month. What MPS receives is really what is left over after the firm obligations of the Canadian market place are satisfied. The Applicant was not aware of any equivalent transactions in the market today. Additionally, the Board notes that the contract with MPS requires it to provide power and energy to supply part of the Applicant's load in Canada whenever the Applicant is unable to do so.

The Board agrees there is no equivalent service being provided to Canadians and therefore finds that the second price guideline is not applicable.

6.2.3 Purchasers Least Cost Alternatives

The Applicant has stated that it was not sure that the type of energy sold to MPS could be sold at a higher price because of its variable nature.

In the Board's view, it is unlikely that MPS would make a purchase similar to the proposed export from any other utility. Consequently, the proposed export cannot be compared to alternative sources of supply available to MPS. Therefore, the Board considers that the third price guideline is not applicable.

6.3 Duration

The Board is satisfied that a 20 year licence while securing the price and supply of power and energy to Perth-Andover for the licence period enables the Applicant to continue to benefit from the integrated operation of its facilities with those of MPS.

6.4 Environmental Impact


The Applicant would generate the power and energy for the proposed export using existing facilities.

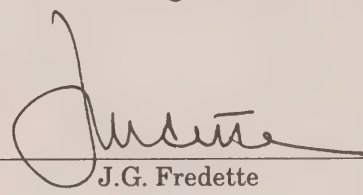
The Board is therefore satisfied that no material adverse environmental impact would result from the production of power and energy which the Applicant seeks to export.

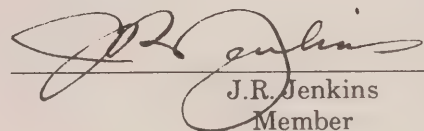
6.5 The Board's Findings

The Board, having satisfied itself that the power and energy to be exported are surplus to reasonably foreseeable Canadian requirements, and that the prices to be charged are just and reasonable in relation to the public interest, and having had regard to all other considerations that appear to it to be relevant, is prepared to issue to the Maine and New Brunswick Electrical Power Company, Limited a licence authorizing the export to MPS of up to 37 MW of firm power and up to 200 GW.h of firm energy in each consecutive twelve-month period, for the period commencing on 1 July 1988 and ending on 30 June 2008. Applicable terms and conditions are set out in Appendix IV.

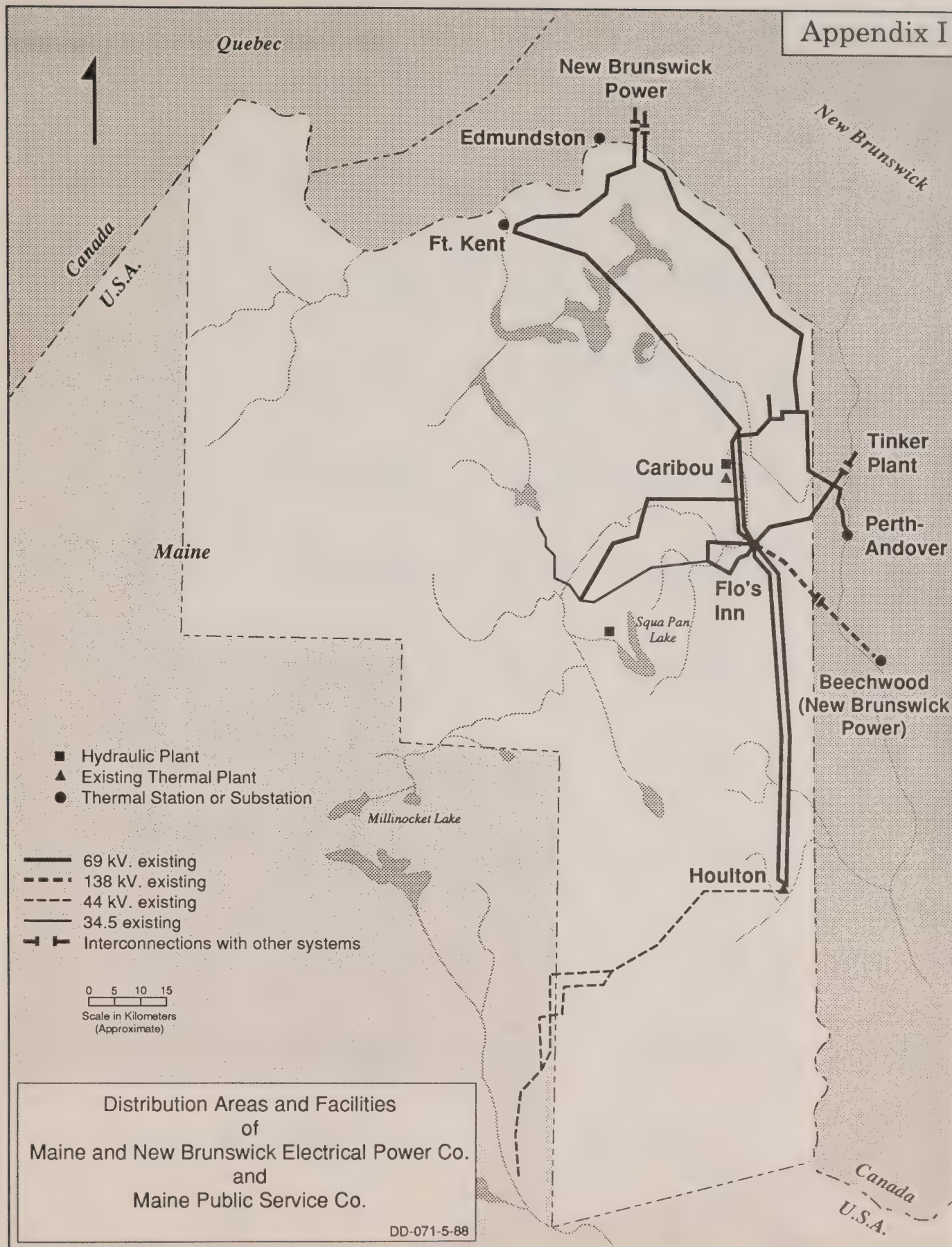
The foregoing constitutes our Reasons for Decision and Decision in the matter of the present application of the Maine and New Brunswick Electrical Power Company, Limited pursuant to Part VI of the National Energy Board Act.


R.B. Horner Q.C.
Presiding Member


J.G. Fredette
Member


J.R. Jenkins
Member

Ottawa Canada
May, 1988



Appendix II

MAINE AND NEW BRUNSWICK ELECTRICAL POWER COMPANY, LIMITED

DEPENDABLE POWER SUPPLY, DEMAND AND FIRM EXPORT

FOR MONTH OF DECEMBER IN EACH YEAR IN LICENCE PERIOD

(MW)

	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Supply: hydro	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
diesel	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
import	2.1	2.2	2.4	2.5	2.6	2.8	2.9	3.1	3.2	3.4
TOTAL	36.6	36.7	36.9	37.0	37.1	37.3	37.4	37.6	37.7	37.9
Demand: Maine & NB(1)	7.4	7.6	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.8
Firm Export	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4
TOTAL	34.8	35.0	35.2	35.4	35.5	35.7	35.8	36.0	36.1	36.2
Surplus	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7
Supply: hydro	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
diesel	1.0	1.0	0	0	0	0	0	0	0	0
import	3.6	3.7	3.9	4.1	4.3	4.5	4.7	5.0	5.2	5.4
TOTAL	38.1	38.2	37.4	37.6	37.8	38.0	38.2	38.5	38.7	38.9
Demand: Maine & NB(1)	9.0	9.1	9.3	9.5	9.8	10.0	10.2	10.5	10.7	11.0
Firm Export	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4
TOTAL	36.4	36.5	36.7	36.9	37.2	37.4	37.6	37.9	38.1	38.4
Surplus	1.7	1.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5

(1) Includes Perth-Andover Load

Appendix III

MAINE AND NEW BRUNSWICK ELECTRICAL POWER COMPANY, LIMITED

ANNUAL DEPENDABLE ENERGY SUPPLY, LOAD AND FIRM EXPORT

(MW.h)

	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	
Supply: hydro	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	
diesel	7,884	7,884	7,884	7,884	7,884	7,884	7,884	7,884	7,884	7,884	
import	7,996	8,714	9,414	10,100	10,763	11,395	11,954	12,509	13,054	13,604	
TOTAL	103,352	104,070	104,770	105,456	106,119	106,751	107,310	107,865	108,410	108,960	
Maine & NB Load	31,778	32,640	33,480	34,303	35,099	35,857	36,528	37,194	37,848	38,508	
Firm Export	71,574	71,430	71,290	71,153	71,020	70,894	70,782	70,671	70,564	70,452	
TOTAL LOAD	103,352	104,070	104,770	105,456	106,119	106,751	107,310	107,865	108,410	108,960	
	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
Supply: hydro	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472	87,472
diesel	7,884	7,884	0	0	0	0	0	0	0	0	0
import	14,172	14,740	15,599	16,459	17,342	18,246	19,174	20,126	21,103	22,104	23,130
TOTAL	109,528	110,096	103,071	103,931	104,814	105,718	106,646	107,598	108,575	109,576	110,603
Maine & NB Load	39,190	39,872	40,902	41,934	42,992	44,077	45,188	46,327	47,494	48,691	49,918
Firm Export	70,338	70,225	62,169	61,996	61,821	61,641	61,458	61,271	61,080	60,885	60,685
TOTAL LOAD	109,528	110,096	103,071	103,931	104,813	105,718	106,646	107,598	108,574	109,576	110,603

Appendix IV

Terms and Conditions of Export Licence Firm Power and Energy (Proposed Licence EL-177)

1. The term of this licence shall commence on 1 July 1988 and shall end on 30 June 2008.
2. The class of inter-utility export authorized hereunder is the sale transfer of firm power and energy.
3. The power and energy to be exported hereunder shall be transmitted over the international power lines for which the Board has issued Certificates of Public Convenience and Necessity No. EC-III-2 and No. EC-III-3.
4. The power and energy to be exported hereunder shall be the power and energy described in Article II of the Memorandum of Agreement dated 31 July 1963 hereinafter referred to as the "Hydraulic Contract" between the Licensee and Maine Public Service Company and in Article II of the Agreement dated 30 September 1948 hereinafter referred to as the "Diesel Contract" between the Licensee and Maine Public Service Company.
5. The Licensee shall increase the prices to be charged for the power and energy to be exported hereunder to ensure that the prices recover the appropriate share of the Licensee's costs incurred in Canada.
6. Any amendment or addition to, or termination or substitution of, the Agreements referred to in Condition 4 shall not be effective until approved by the Board.
7. The quantity of power that may be exported hereunder shall not exceed 37 MW.
8. The quantity of energy that may be exported hereunder in any consecutive twelve-month period within the term of this licence shall not exceed 200 GW.h.
9. The price to be charged for exports of power and energy hereunder for production from the diesel generating unit located at the Tinker plant site shall not be less than the price as set out in Article VII of the Diesel Contract, as amended, or such other price as the Board may approve.
10. The price to be charged for exports of power and energy hereunder for production from the Tinker hydraulic generating station shall not be less than the price as set out in Article XII of the Hydraulic Contract, as amended, or such other price as the Board may approve.
11. The Licensee shall within 15 days after the end of each month during the term of this licence, file with the Board a report, in such form and detail as the Board may specify, setting forth for that month, information pertaining to transactions under this licence.

